

CLAIMS

What is claimed is:

1. A damper for controlling the air flow through a passage such as a ventilation conduit used in mounting a wind turbine on a roof of a structure, said damper comprising:

5 a housing having a cylindrical wall, said housing being adapted to fit within said passage;

a plurality of louvers pivotably mounted in said housing and being rotatable between an open position and a selected closed position, said louvers blocking at least a portion of the air flow through said damper when in said selected closed position;

10 means for moving said louvers between said open position and said selected closed position in response to changes in temperature;

linkage means for interconnecting said louvers together whereby said louvers are moved in unison between said open position and said selected closed positions; and

15 air flow selector means on said damper for adjusting the selected closed position of said louvers to control the amount of air flow through said damper when said louvers are moved to said selected closed position.

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2. The damper of claim 1 wherein said damper has a low profile wherein said louvers are of a width whereby no portion of said louvers will extend out of said housing when said louvers are in either said open position or said selected closed position.

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3. The damper of claim 1 wherein said linkage means comprises:

an elongated linkage strip positioned across said louvers; and

5 means for pivotably connecting each louver to said linkage strip.

4. The damper of claim 1 wherein said means for moving said louvers between said open position and said selected closed position comprises:

A bimetallic coil having a first end and a second end.

5. The damper of claim 4 wherein said plurality of said louvers includes a master louver and

5 wherein said first end of said bimetallic coil is fixed to said housing and said second end of said bimetallic coil is fixed to said master louver whereby expansion or contraction of said coil rotates said louvers in unison.

6. The damper of claim 5 wherein said air flow selector means comprises:

5 an arcuate path through said wall of said housing, each point along said path representing a different, selected closed position of said louvers; and

10 a detent adapted to be positioned at a said point along said path, said detent being of a length to extend through said housing and engage one of said louvers to limit further rotation of said louvers toward a closed position when said louvers reach said selected closed position.

7. The damper of claim 5 wherein said air flow selector means comprises:

5 a plurality of spaced openings through said wall of said housing, each of said openings representing a different, selected closed position of said louvers; and

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a detent adapted to be positioned within a selected one of said openings, said detent being of a length to extend through said selected opening and engage one of said louvers to limit further rotation of said louvers toward a closed position when said louvers reach said selected closed position.

8. The damper of claim 6 wherein said different, selected closed positions range from about 0% of the maximum air flow through said damper to about 25% of the maximum air flow through said damper.

9. The damper of claim 7 wherein said air flow selector means further comprises:

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a detent receiver fixed on said one of said louvers and adapted to receive said detent to thereby limit rotation of said louvers to said selected closed position.

10. The damper of claim 1 wherein said air flow selector means comprises:

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passages through said louvers for allowing air flow through said damper when said damper is in said selective closed position.

11. The damper of claim 1 wherein said air flow selector means comprises:

interference means for stopping rotation of said louvers when said louvers reach a said selected closed position.

12. The damper of claim 11 wherein said interference means comprises:

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a stop element attached to at least one of said plurality of louvers to stop rotation of said louvers when said louvers reach said selected closed position.

13. The damper of claim 1 including:

5 a plurality of L-shaped adapters, each said adapter having one leg attached to said housing and another leg extending out from the periphery of said housing to thereby adapt said damper for use in larger diameter passages.

14. The damper of claim 1 wherein said housing, said louvers, and said linkage means are all made of molded plastic.

15. A damper for selectively controlling air flow through a passage, said damper comprising:

5 a cylindrical, stepped housing made of molded plastic, said housing having an upper wall, a larger-diameter lower wall, and an integral step connecting said walls;

a plurality of latch slots formed in and radially spaced around said step;

10 a pair of arcuate retainers formed of molded plastic, each retainer having a plurality of latches molded thereon which are adapted to be received by respective said slots in said step of said housing to latch said retainers in said housing, each retainer having a plurality of troughs spaced along the upper surface thereon;

15 a plurality of louvers of appropriate lengths to selectively fit within said housing, each louver having an axle pin at either end thereof adapted to be pivotably received in a respective said trough in each of said retainers so that when said latches are received into their respective said latch slots within said housing, said louvers are thereby pivotably mounted
20 in said housing and are rotatable between an open and a selected closed position;

means for moving said louvers between said open position and said selected closed position in response to changes in temperature;

25 linkage means for interconnecting said louvers together whereby said louvers are moved in unison between said open position and selected closed positions; and

air flow selector means on said damper for adjusting the selected closed position of said louvers to control the
30 amount of air flow through said damper when said louvers are moved to said selected closed position.

16. The damper of claim 15 wherein said damper has a low profile in that said louvers are of a width whereby no portion of said louvers will extend out of said housing when said louvers are in either said open position or said closed position.

17. The damper of claim 16 wherein said linkage means comprises:

an arm molded on each of said louvers and having an opening therethrough;

5 an elongated, linkage strip made of molded plastic and positioned across said louvers; and

a plurality of tapered, split-headed connectors integrally molded at spaced intervals along said linkage strip, the head of each said connector adapted to pass through and latch
10 into said opening in said arm of a respective louver to thereby form a pivotable connection therebetween.

18. The damper of claim 17 wherein said means for moving said louvers between said open position and said closed position comprises:

a bimetal coil having a first end and a second end.

19. The damper of claim 18 wherein said plurality of said louvers includes a master louver whose said axle pin at one end thereof extends through an opening in said housing and wherein

said first end of said bimetallic coil is fixed to
5 said housing and said second end of said bimetallic coil is fixed

to said one axle pin of said master louver whereby expansion or contraction of said coil rotates said louvers in unison.

20. The damper of claim 19 wherein said air flow selector means comprises:

5 a plurality of openings through said upper wall of said housing, each of said openings representing a different, selected closed position of said louvers; and

a detent adapted to be positioned within a selected one of said openings, said detent being of a length to extend through said selected opening and engage one of said louvers to limit further rotation of said louvers when said louvers reach
10 said selected closed position.